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Rogue River - Siskiyou National Forest

Land and Resource Management Plan

MONITORING AND EVALUATION REPORT

Fiscal Year 2007

***Status of implementation activities
associated with the Biscuit Fire Recovery
Project***

***Report on 2007 Inventory and
Monitoring Projects***

ROGUE RIVER-SISKIYOU NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN

MONITORING AND EVALUATION REPORT For Fiscal Year 2007

INTRODUCTION

Background

The Rogue River National Forest Land and Resource Management Plan (LRMP or Forest Plan) became effective in July of 1990. The Forest Plan for the Siskiyou National Forest became effective in March of 1989.

These Forest Plans provide direction for integrated management of the resources of each National Forest. Forest Plans are implemented through projects designed to be consistent with their direction and land allocations. Monitoring is an integral part of the Forest Plan. Projects and programs are monitored for consistency with the plan and to test the validity of the plan itself. There is provision for amendment of the Forest Plan where monitoring shows a need for change or when changes in laws and regulations occur.

On April 13, 1994, the Record of Decision for *Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* was signed by the Secretary of Agriculture, Mike Espy and the Secretary of the Interior, Bruce Babbitt. This Record of Decision (ROD) amended the Rogue River and Siskiyou National Forest Land and Resource Management Plans and provided new direction for management of the natural resources of the Forests.

This ecosystem plan, also known as the Northwest Forest Plan, was significant because it provided a watershed-based approach to management of Federal lands within the range of the northern spotted owl. The future management of late-successional and old-growth forests, recovery of the northern spotted owl and an Aquatic Conservation Strategy to restore aquatic ecosystems are central parts of this Plan. Whenever the term "Forest Plan" is mentioned in this document, it refers to the Rogue River and/or Siskiyou National Forest Land and Resource Management Plans as amended by the April 13, 1994, Record of Decision.

In December 2003, the Forest Service Washington Office approved administrative consolidation of the Rogue River and Siskiyou National Forests. Reference is made throughout this Monitoring Report to the Rogue River-Siskiyou National Forest (RR-SNF) as applicable. When reference is made to the 1990 Forest Plan or land management direction applicable to the Rogue River National Forest, the phrase Rogue River National Forest (RRNF) continues to be utilized. When reference is made to the 1989 Forest Plan or land management direction applicable to the Siskiyou National Forest, the phrase Siskiyou National Forest (SNF) continues to be utilized.

Throughout this report, reference is made to certain organizational units of the Forest as Ranger Districts. Reference is made to the Powers Ranger District, the Gold Beach Ranger District (former Chetco and Gold Beach Ranger Districts), the Wild Rivers Ranger District (former Illinois Valley and Galice Ranger Districts), the High Cascades Ranger District (former Prospect and Butte Falls Ranger Districts), and the Siskiyou Mountains Ranger District (former Applegate and Ashland Ranger Districts).



Monitoring reports track implementation of the Forest Plans. This report documents selected monitoring efforts and evaluation of Forest Plan implementation during fiscal year (FY) 2007 (10/1/06 to 9/30/07). This report generally covers Forest Plan monitoring elements and is a summary of selected Forest reports and monitoring efforts. Included in this years report is a summary of the status of implementation activities associated with the Biscuit Fire Recovery Project, through September 2007. It is not a report of all of the programs or program accomplishments on the Forest.

Forest Plan monitoring is an ongoing process. The Rogue River-Siskiyou National Forest is continuously monitoring and evaluating new information and changing conditions. Monitoring activities and results have been summarized in annual monitoring reports for several years; this report is the latest of several Forest Plan Monitoring and Evaluation Reports previously prepared for each National Forest. These documents are available to the public upon request.

Forest Plan Monitoring Strategies

The Monitoring Strategy for the **Rogue River National Forest (RRNF)** became effective in 1990 with the signing of the Forest Plan. Chapter 5 of the RRNF Forest Plan contains a summary of the Monitoring and Evaluation of Forest Plan implementation. The monitoring strategy was based on that summary and on the detailed monitoring worksheets contained in the Planning Record.

The Rogue River National Forest Monitoring Strategy Update is a distillation and improvement of the key components of the 1990 Strategy. The Strategy defines the items to be monitored and contains the Forest goals, outputs and desired future conditions, key monitoring questions, units of measure, frequency, proposed monitoring methods, standards, and assigned responsibilities.

The Monitoring Strategy Update was completed in January 1997, and is available as a separate document from the Forest Supervisor's Office. Monitoring and Evaluation Reports for the Rogue River National Forest have been based on this Monitoring Strategy Update since 1997.

The Monitoring Strategy for the **Siskiyou National Forest (SNF)** first became effective in 1989 with the signing of the Forest Plan. Chapter 5 of the SNF Forest Plan contains a summary and table for the components of the Monitoring and Evaluation program. The Monitoring and Evaluation Program for the SNF has been guided by that document since 1989 and several annual reports have been prepared and are available upon request.

Monitoring Strategy for 2007

Federally appropriated funding for monitoring and monitoring reports has been minimal over the previous few years. As with previous Monitoring Reports, reporting is done on specific elements of the respective monitoring strategies, rather than prepare a complete report on all elements. The goal of this approach was to provide meaningful data or results on elements actually monitored, rather than to generate incomplete information on all elements. In addition, several specific inventory and monitoring projects were conducted in FY 2007, with appropriated funding. This report includes summaries of those projects. Specifically, this FY 2007 report includes discussion of the following:

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Monitoring and Evaluation

Monitoring and evaluation in the Pacific Northwest Region (Region 6) is designed to be reactive to the major transformation molding the agency nationally, and inherent to society as a whole. The scope and importance of activities on or near the National Forests have become significant to “everybody”. In this context, monitoring exists to serve management. For that reason, the Rogue River-Siskiyou National Forest and Region 6 strives to put monitoring and evaluation in the context of “adaptive management”.

For the purpose of this report, Forest Plan monitoring is done to measure progress in Forest Plan implementation. It consists of gathering data, making observations, and collecting and disclosing information. Monitoring is also the means to determine how well objectives of the Forest Plan are being met, and how appropriate the management Standards and Guidelines are for meeting the Forest’s outputs and providing environmental protection. Monitoring is used to determine how well assumptions used in the development of the Forest Plan reflect actual conditions.

Monitoring and evaluation may lead to changes in practices or, provide a basis for adjustments, amendments, or Plan revisions. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Upon evaluation of the data and information, determinations are made as to whether or not planned conditions or results are being attained and when they are within Forest Plan direction. When a situation is identified as being outside the limits of acceptable variability, changes may need to occur.

While monitoring and evaluation comprises the control system over management activities on the Forest, each has a distinctly different purpose. Monitoring is gathering information and observing management activities. Forest Plan **monitoring** on the Rogue River and Siskiyou National Forest has been organized into four levels:

Implementation Monitoring is used to determine if the objectives, standards, guidelines, and management practices specified in the Forest Plan are being implemented. In other words, “Did we do what we said we were going to do?”

Effectiveness Monitoring is used to determine if the design and execution of the prescribed management practices are effective in meeting the goals, objectives, and desired future condition stated in the Forest Plan. Simply stated, “Are the management practices producing the desired results?”

Baseline Monitoring is designed to characterize the existing or previously existing condition for comparison with future monitoring or predicted conditions. In some cases this can refer to an initial inventory or set of measurements taken at the beginning of monitoring efforts. This type of monitoring is useful as a starting point or comparison for the other types of monitoring and can form a basis for trend detection.

Validation Monitoring is used to determine whether data, assumptions, and coefficients used to predict outcomes and effects in the development of the Forest Plan are correct. Again, stated another way, “Are the planning assumptions valid, or are there better ways to meet Forest Plan goals and objectives?”

Evaluation is the analysis and interpretation of the information provided by monitoring. Evaluation is the feedback mechanism identifying whether there is a need to change how the Forest Plan is being implemented to comply with existing direction, or whether there is a need to change Forest Plan direction itself through amendment or revision exists.

Typically, several years of effectiveness and validation monitoring results are needed to permit meaningful evaluation of trends against baseline data. For this reason, this report contains few results on the effectiveness of the Standards and Guidelines or the validity of Forest Plan models and assumptions. It emphasizes the question, “Did we do what we said we were going to do?” as well as reporting progress that is being made on answering questions of effectiveness and validation.

MONITORING RESULTS

Part One: Selected Forest Plan Items for the FY 2007 Report

This section presents the results and evaluation of the selected Forest Plan Monitoring Items that were monitored during FY 2007, for the Rogue River and Siskiyou National Forests. Each Monitoring Item is briefly described by the monitoring Category, Group and the individual Goals and Objectives that comprise the Monitoring Item. Also brought forward are selected Monitoring Questions from the Monitoring Worksheets, based on the respective monitoring strategies. Based on these questions, results and evaluations are presented, including recommendations. Note that monitoring items are sometimes reported in this document separately for each National Forest, yet together according to the selected element. Recommendations are applicable to both National Forests, unless otherwise noted.

Physical Resources

MONITORING ITEM: *AIR QUALITY*

GOAL(S), MONITORING QUESTION(S): The goal for the Rogue River National Forest is to reduce Total Suspended Particulates (TSP) produced by prescribed fire to 56% of the base year production level. This goal is to be reached within ten years from the base year, which is 1991. Total TSP for 1991 was 39,708 tons. The goal for the Siskiyou National Forest is 7,300 tons or less produced on an annual basis. The monitoring questions include:

- **Is Best Available Technology (BAT) as defined by the Oregon State Implementation Plan (SIP), being utilized?**
- **Are management activities meeting the requirements of the Oregon SIP?**
- **Are tons of yearly TSP production on a downward trend toward the 2001 goal?**
- **Siskiyou NF: Does Total Suspended Particulate produced from planned ignitions exceed 7,300 tons Forest-wide annually?**

FINDINGS and EVALUATION

Rogue River National Forest

Results of monitoring show that Best Available Technology is being used. Review of project plans show a trend in the use of treatment methods other than prescribed fire. Management activities were in compliance with the Oregon State Implementation Plan (SIP).

For fiscal year 2007, 1,788 acres were burned with prescribed fire and approximately 14,372 tons of fuel consumed. This equates to **3,590 tons of Total Suspended Particulate (TSP)** produced. The trend is clearly downward and has reached the 2001 maximum production goal of 22,236 tons. With the planned increase in hazardous fuels reduction projects in the near future, TSP production may increase, but it should still remain well below the 22,236 ton goal (56% of the 1991 base year TSP). This portion of the Forest met all Smoke Management Guidelines and experienced no intrusions. Based on these findings, monitoring indicates that management direction is being achieved.

Siskiyou National Forest

In fiscal year 2007 there were 433 acres burned with prescribed fire and approximately 5,014 tons of fuel consumed. This equates to **1,250 tons of total suspended particulates (TSP)** emitted from these burns. This is far below the threshold (17%) of 7,300 tons. With the planned increase in hazardous fuels reduction projects in the near future, TSP amounts may increase, but should still stay well below the 7,300 ton threshold of concern. This portion of the Forest met all Smoke Management Guidelines and experienced no intrusions. Based on these findings, monitoring indicates that management direction is being achieved.

RECOMMENDATIONS: Based on these findings, monitoring indicates that management direction is being achieved on the Forest.

Biological Resources

MONITORING ITEM: *VEGETATION MANAGEMENT EFFECTIVENESS*

GOAL(S), MONITORING QUESTION(S): The Forest goal is to be in compliance with the Forest Plans and with the Regional Guide, which specifies compliance with the *Managing Competing and Unwanted Vegetation Final Environmental Impact Statement* and *Mediated Agreement*. Overall goals include utilization of management practices that best suit the land management objectives. The monitoring questions include:

1. How are the number of trees planted per acre and their survival and growth being affected by the amount of site preparation being done on the Forest?
2. Are young conifers being released from competing vegetation in a timely and cost-effective manner?
3. Are long-term growth and yield projections being affected by the use (or non-use) of herbicides and prescribed burning?

4. **Is the Forest meeting the intent of the *Managing Competing and Unwanted Vegetation Final Environmental Impact Statement and Mediated Agreement*?**
5. **Are Best Management Practices (BMPs) being effectively implemented for noxious weeds, Port Orford cedar disease (POC) and sudden oak death (SOD)?**

FINDINGS AND EVALUATION:

1. In fiscal year 2007, the Forest planted 1,039 acres, 965 acres of which were in the Biscuit Fire area and 19 acres were in the Wasson Fire area. First year survival averaged 93%, ranging from 89 to 100%, a substantial improvement over the previous year's report of 64%. Douglas-fir seedlings continue to have the greatest mortality the first year. In all, four species (Douglas-fir, sugar pine, Port-Orford-cedar, and ponderosa pine) were outplanted.

In addition to artificial reforestation, the Forest certified 442 acres of natural regeneration without site preparation, all of which fell within the Biscuit Fire area. Third year seedling survival ranged from 85 to 100%, with the average of 88%. As with the first year seedlings, the Douglas-fir third year seedlings were the poorest performers. Of the reported 1,442 acres, about 1,424 acres were considered a first time success. Within the Biscuit Fire area 1,354 acres were considered first time successes. All acres planted three years ago within the Biscuit Fire area were considered first time successes at the 3rd year survey.

Two introduced pathogens that cause tree mortality are present on the Rogue River-Siskiyou National Forest: white pine blister rust, which infects the five-needle pine species (sugar pine and western white pine), and Port-Orford-cedar (POC) root disease. These pathogens are particularly devastating to young sugar pine and western white pine and POC regeneration. The Forest continues to plant rust-resistant five-needle pine (sugar pine and western white pine) seedlings in its reforestation program to maintain five-needle pines in the ecosystem. The Forest is also planting root disease resistant Port-Orford-cedar seedlings to maintain POC in its ecosystems.

2. Crop tree conifers are being released from competition with brush and non-crop trees as prescribed and as funding allows. Release from woody vegetation can be expensive and usually requires manual control methods with chainsaws to remove competing vegetation as well as piling of the slashed material to reduce the fuels hazard of such work. Manual release treatments were accomplished on 559 acres (none within the Biscuit Fire area) in fiscal year 2007. The balance of release needs at the end of fiscal year 2007 is 6,742 acres.

2,081 acres (none within the Biscuit Fire area) of pre-commercial thinning were accomplished in fiscal year 2007. The balance of pre-commercial thinning needs grew to 23,802 acres by the end of fiscal year 2007. The Forest has traditionally only received funding for 5 to 7 percent of the total need for pre-commercial thinning, with the majority of the funding coming from timber sale receipts (Knutson-Vandenberg trust fund collections).

Pruning accomplished in fiscal year totaled 1,494 acres (none within the Biscuit Fire area). The outstanding need identified for pruning at the end of fiscal year 2007 is 13,852 acres.

Costs for all Timber Stand Improvement (TSI) activities has risen over the years due to the Forest's commitment to treat activity created slash where designated to reduce the fuels hazard on the landscape.

Low treatment percentages are due to lack of funding. Not accomplishing planned release and pre-commercial thinning treatments *will* have an adverse effect upon meeting timber outputs projected in the Land and Resource Management Plans. Not accomplishing planned release, pruning, and pre-commercial thinning keeps managed stands in conditions vulnerable to damage or destruction by wildfire effects. The Forest continues to seek funding that would enable it to improve the fuels condition class rating and improve the resistance to stand replacement wildfire events.

The Rogue River-Siskiyou National Forest continues to prioritize, and use where appropriate, an aggressive animal damage control program to improve reforestation success.

In fiscal year 2007 reforestation monitoring reports indicated prescribed treatments are cost-effective, based on minimal monitoring of other resource activities (weed control, range, fuels, wildlife, etc.). All harvest units were monitored for stocking levels and certified as meeting Forest stocking standards as prescribed.

3. No recent growth simulations have been made comparing long-term growth and yield of herbicide treated stands with non-treated stands. However, yield tables prepared for the Forest Plans show an approximate 5 to 10% reduction in cubic volume mean annual increment and a 10-year delay in culmination of mean annual increment for non-treated stands. It should be further noted that silvicultural practices that directed broadcast burning, often hot burns to prepare sites for artificial reforestation but stimulated competing shrub growth, are not common practice today.
4. An estimated 420,000 acres of National Forest System lands in the Pacific Northwest Region (Region Six) are currently infested with invasive plants¹. These plants are damaging biological diversity and ecosystem integrity within and outside the National Forests, including the Rogue River-Siskiyou. Invasive plants lead to many adverse environmental effects, including: displacement of native plants; reduction in habitat and forage for wildlife and livestock; loss of threatened, endangered, and sensitive species; increased soil erosion and reduced water quality; reduced soil productivity; and changes in the intensity and frequency of fires. Invasive plants can spread between National Forest System lands to neighboring areas, affecting all land ownerships.

In 2005, the Regional Forester identified the need for: (1) Forest Plan level management direction that would reduce the extent and rate of spread of invasive plants and help prevent new infestations; (2) Release from the Forest Plan direction established by the 1988 ROD and 1989 Mediated Agreement so that new practices, technologies, and formulations of herbicides are available for use in invasive plant management; and (3) An updated list of herbicides available for use by the Forests.

¹ Invasive plants are defined here as "a non-native plant whose introduction does or is likely to cause economic or environmental harm or harm to human health" (Executive Order 13122). Invasive plants are distinguished from other non-native plants by their ability to spread (invade) into native ecosystems.

The Final Environmental Impact Statement for the *Invasive Plant Program - Preventing and Managing Invasive Plants* (FEIS) considered three action alternatives to meet these needs. In a Record of Decision signed on October 11, 2005, the Regional Forester selected the Proposed Action from the FEIS, with modifications. Under this decision, invasive plant management direction is added to all National Forest Plans in the Region (see ROD Appendix 1 for full text added to Forest Plans). The decision was not retained as a Regional-scale decision; rather it becomes part of the individual Forest Plans.

Under this decision, all National Forests in the Region are released from direction established by the 1988 Record of Decision for Managing Competing and Unwanted Vegetation (ROD) and 1989 Mediated Agreement for *invasive* plant management. Parts of the 1988 ROD and 1989 Mediated Agreement that apply to unwanted *native* vegetation are not affected by this decision. Invasive plant management direction stemming from these documents is replaced by new direction, in the form of:

- Desired Future Condition (DFC) statement,
- Goals and objectives statements,
- Standards for preventing the introduction, establishment and spread of invasive plants,
- Standards for invasive plant treatment and site restoration, and
- An inventory and monitoring framework.

The purpose of this management direction is to facilitate subsequent actions to eliminate or control invasive plants so that: (1) desired conditions on National Forest System lands can be attained; (2) federal land managers' ability to provide goods and services from the National Forest System lands is maintained; and (3) the Forest Service's ability to cooperate with similar efforts across other ownerships is improved.

Management direction related to invasive plants (beyond the 1988 ROD and 1989 Mediated Agreement) is also established by Forest Service Manuals, letters of Regional policy and individual Forest Plan standards in Region Six. This decision adds new direction, but does not vacate existing invasive plant management direction beyond the 1988 ROD and 1989 Mediated Agreement. Inconsistencies between new and existing standards will be reconciled on a Forest-by-Forest basis, as Forest Plans are amended or revised or specific projects are planned.

This decision, in itself, does not approve any site-specific projects. Site-specific treatment decisions will be based on location, biology and size of the target invasive plant species, site conditions, and integrated resource objectives. Invasive plant treatment projects will be subject to future National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) analysis before being implemented.

5. In November 1998, the *Rogue River NF Noxious Weed Strategy* emphasized *Prevention* and identified appropriate treatment methods. In May 1999, an environmental assessment for *Integrated Noxious Weed Management on the Rogue River National Forest* further refined appropriate methods based on species and size of infestation for known noxious weed sites. On September 1, 1999, the Forest Supervisor, as the responsible official, made a decision, documented via a Decision Notice, to authorize noxious weed management practices, including but not limited to the use of herbicides, on the Rogue River National Forest.

Implementation of this decision has been ongoing. New information regarding the types of herbicides available for use under this decision has occurred via the 2005 Record of Decision (ROD) signed by the Regional Forester of the Pacific Northwest Region (R6), for Pacific Northwest Region Invasive Plant Program - Final Environmental Impact Statement (FEIS) - Preventing and Managing Invasive Plants. An opportunity was identified to utilize new herbicides approved in the R6 2005 ROD and FEIS and potentially reduce the environmental effects of herbicide use.

The R6 2005 ROD included a comparison Summary of Herbicides and Surfactants Risk Ratings and the opportunity to use all ten chemicals was authorized. An Interdisciplinary Team reviewed the herbicide information and the authorization to use these ten chemicals and concluded that this would NOT change the 1999 Rogue River National Forest decision. The Forest's 1999 decision provided for the use of herbicides, though fewer were authorized for use than in the Region's 2005 decision. There is now an option of using additional chemicals, providing increased opportunity to use those that pose the least risk to the environment, while providing for effective treatment of the invasive plants.

In accordance with Forest Service policy, the Forest Supervisor found that new information or changed circumstances regarding this decision did not require a new or changed decision under the National Environmental Policy Act. Further, the new information indicates that that this changed condition will not have a significant impact on the human environment, with the additional use of new herbicides having less potential effect than those associated with the original decision.

Best Management Practices (BMPs) further provides prevention direction. The Rogue River-Siskiyou National Forest continues to implement *Best Management Practices for Noxious Weed Prevention and Management*, *Port-Orford-Cedar Root Disease Prevention and Management*, and *Sudden Oak Death Prevention and Management* (February 2002). The objectives of this interim direction are to 1) reduce the risk of spreading noxious weeds; 2) prevent the establishment of new invaders; 3) integrate weed management practices into resource programs; 4) conduct research and monitoring to evaluate effectiveness and identify emerging issues; 5) reduce spread and integrate management practices for POC and SOD; and 6) build awareness within the agency.

Port-Orford-Cedar Root Disease

Port-Orford-cedar (POC) is an ecologically and economically important tree species. Its natural range is geographically limited to southwestern Oregon and northwestern California, but within that area, it occupies a broad environmental range. Port-Orford-cedar is affected by an exotic root pathogen, *Phytophthora lateralis* (PL). The pathogen causes POC root disease and is nearly always fatal to the tree it infects.

Port-Orford-cedar program objectives are to maintain POC as an ecologically and economically significant species on National Forest (NF) lands. Port-Orford-cedar management provides cost-effective mitigation for controllable activities creating appreciable additional risk to important uninfected POC, not to reduce all risk to all trees at all cost. Port-Orford-cedar management slows the spread of the pathogen enough to maintain POC's significant ecological and economic functions, without the cost of the management strategy exceeding its effect on the value of these functions.

There are three Forest Service management regimes for POC across its range. In Region 6, Rogue River-Siskiyou NF, a POC Record of Decision (ROD) amends the Siskiyou National Forest Land and Resource Management Plan (LRMP). On March 29, 2004 a Record of Decision was signed by the Forest Supervisor to adopt new direction for managing Port-Orford-Cedar root disease. This ROD takes a more aggressive approach into managing POC during planning of transportation, off-road vehicle use and special forest products activities and other forest uses. Following are a summary of key points of this decision; the ROD amends the 1989 Siskiyou NF Forest Plan by:

- Better describing available treatments.
- Providing a risk key to help managers consistently determine which special protection measures need to be applied.
- Providing special emphasis on protecting the 144 two thousand acre watersheds that do not currently have the disease.
- The ROD does not change any NW Forest Plan land use allocations or affect private land.
- Port Orford cedar may be removed 25-50 feet of roads to reduce potential for new infection of healthy Port-Orford-cedar populations or to remove diseased trees.
- Complex timber sales and fuels treatments may require specific equipment types, seasonal operations, and washing of equipment.
- Fire fighting activities will include treating potentially infested water with Clorox bleach, but only when the requirements do not delay protection of life and private property.

The POC ROD applies to all projects with a decision date after March 29, 2004. The plan amendment includes: a) Standards and Guidelines for General Direction applicable everywhere and Management Practices optional for projects, b) a Risk Key, and c) Identification of 7th field watersheds, which require implementation of Management Practices if the management activity introduces appreciable additional risk to the POC in that watershed.

Within the range of POC, there are 52 fifth field (analytical) watersheds that contain POC. Thirty-five fifth field watersheds (67.3 percent) are infested with PL. However, in those analytical watersheds where PL occurs, on average, 83 percent of the acres with POC remain uninfested. Port-Orford-cedar occurs on approximately 271,963 federally administered acres. 89,748 acres with POC are considered high risk sites. High risk sites are along roads and low lying wet areas (e.g., streams, lakes, swamps, and drainage ditches). All other sites are considered low risk.

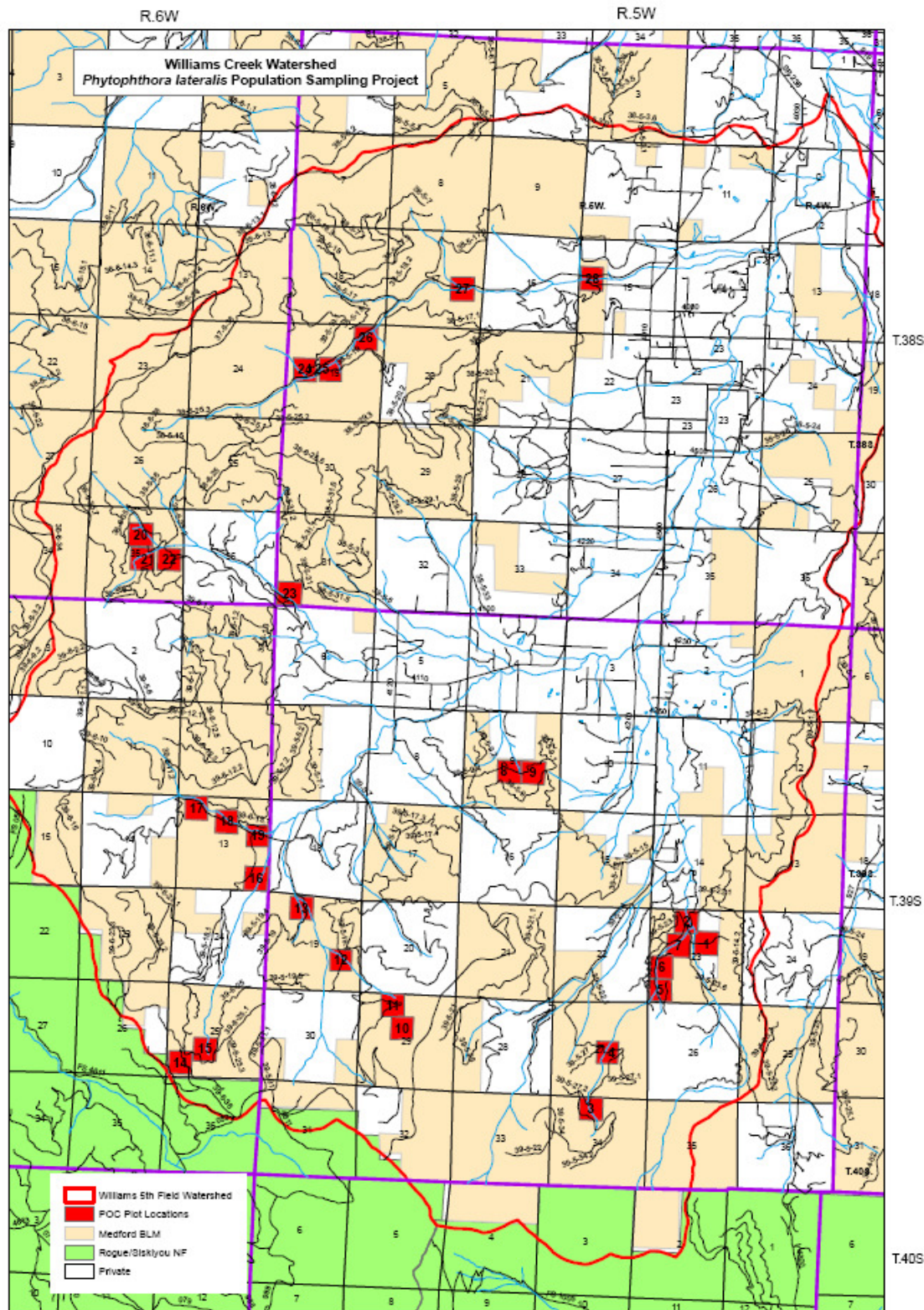
Staff from the USDA-FS Southwest Oregon Forest Insect and Disease Service Center, USDA-FS Northern California Shared Service Area, and Region 5 and 6 Forest Health Protection will continue to work with field units to evaluate and coordinate existing management techniques to reduce the occurrence of PL, retain healthy POC, and have and will continue to provide hands-on training as needed.

POC Monitoring Projects

Post-Biscuit fire analysis of surviving POC in areas where untreated water was used in fire suppression shows no new PL infestation. This indicates that PL was absent or present in such low concentrations that no new infection resulted from the use of this untreated water. By establishing plots to be monitored over the course of one year, it may be possible to statistically quantify PL spore loads during different times of the year and how this relates to stream temperature and flow.

A monitoring project was proposed in the Williams Creek Watershed to sample PL. The project is in Riparian Reserves and located at T38S, R5W, Sections 15, 17, 18, 19, and 31; T38S, R6W, Section 35; T39S, R5W, Sections 9, 19, 23, 27, 29, and 34; T39S, R6W, Sections 13 and 25.

Figure 1-1. Williams Watershed PL Population Sampling Project



Out of the 28 potential baiting sites shown on the preceding map, 16 will be selected for the project. The selected sites will be baited for PL by partially immersing twelve susceptible POC seedlings in the stream, leaving them in place for six to eight weeks and removing the seedlings for lab analysis at the Service Center. Seedlings will be in 10 cubic inch plugs with the bottom one third of the container removed. Seedlings will be anchored in place with metal pins. Approximately 50 feet of stream will be baited at each site. Baiting will be replicated eight times over one year. Drainages will have one uninfested upstream site baited as a control with all other baiting taking place in downstream infested areas. All materials will be removed from the baiting sites at the end of the project.

Sudden Oak Death (SOD)

Unprecedented levels of tanoak and coast live oak mortality were noted first in Marin County, CA in the early to mid-1990s. Local residents coined the phrase “Sudden Oak Death” to describe the apparently rapid tree mortality they observed. The cause was then unknown. In 2000, a new species of *Phytophthora*, a fungus-like water mold of unknown origin, was isolated from cankers (localized areas of dead cambium) on dying trees and later was found to be the causal agent. Soon it was recognized that the same pathogen was causing leaf blight, stem cankers, and tip dieback on nursery-grown rhododendrons. The new species was named *Phytophthora ramorum* in 2001 (Goheen et al. 2006).

Phytophthora ramorum is an Oomycete, a water mold that looks like a fungus but is more closely related to some marine algae. Most *Phytophthora* species are root pathogens, but *P. ramorum* affects above-ground plant parts. *P. ramorum* is well adapted to the mild, wet conditions of the Pacific Northwest. The pathogen forms sporangia (sacs of spores) on infected leaves or twigs. The sporangia are spread in wind and rain and can release swimming zoospores if they land on a wet surface. The zoospores germinate and infect the plant, starting a new infection. *Phytophthora ramorum* also makes thick-walled resting spores (chlamydospores) in infected plant parts, which allow it to survive heat and drought and to persist for months in soil and plant debris (Goheen et al. 2006).

The pathogen has a broad host range including hardwood trees, such as coast live oak; landscape plants, such as rhododendron; herbaceous plants, such as western starflower; and softwood trees, such as coast redwood and Douglas-fir. Where it has become established in California, *P. ramorum* has adversely affected ecosystem functions, increases fire and safety hazards, and reduces property values in developed areas (Rizzo and Garbelotto 2003).

In Oregon, the pathogen was detected in 2001 via aerial survey. To protect natural resources and horticultural industries from the artificial spread of *P. ramorum*, numerous preventative regulations have been imposed by many states and countries since 2000. These regulations typically include quarantine areas and import/export restrictions. In all cases, regulations have been adopted to help prevent the movement of infested wood, bark, chips, forest greenery, soil and host nursery stock from infested areas to uninfested areas. In particular, a 162 square mile area of Curry County, Oregon, is currently subject to quarantine as established under Oregon Revised Statute (ORS) 561.510 and ORS 561.540. For current information on quarantines and other Sudden Oak Death regulations, visit the Oregon Department of Agriculture (ODA) website at <http://egov.oregon.gov/ODA/PLANT>, and the USDA Animal and Plant Health Inspection Services (APHIS) website at <http://www.aphis.usda.gov/ppq/ispm/pramorum>. To date, over 600 tanoaks have been found infected since 2001 on approximately 198 acres; altogether, about 1,800 acres have been treated.

In the last week of April 2006, a *Phytophthora ramorum* infection site was confirmed on National Forest System lands in the Chetco River drainage approximately 8-9 miles northeast of Brookings near Loeb State Park. The legal description is T.40S., R.13W., section 13, W.M., Curry County, Oregon. Disease confirmation was based on a field review of visual symptoms and DNA testing at Oregon State University. The boundary of the treatment area (also referred to as the eradication zone) is approximately 300 feet beyond known infected trees. The infected tanoak occurred along the boundary of State of Oregon Parks land and National Forest System land. The total eradication zone was approximately 10-11 acres of which an estimated 5 acres occurs on National Forest.

The District Ranger of the Gold Beach Ranger District decided to treat the infected area on National Forest System Lands within the eradication zone. All tanoak (*Lithocarpus densiflorus*) and other hosts with stems meeting minimum requirements suitable for injection (approximately 1 inch in diameter and greater) within the eradication zone were treated by injecting the chemical glyphosate² using a method referred to as “hack and squirt”, two weeks prior to cutting the stems.

Treatment of this site (confirmed in April 2006, herbicide treatment in June 2006) was completed (the burning was done) in late fall 2006. Vegetation response, pathogen presence, and wildlife (amphibian) surveys have been done in treated areas and at untreated adjacent sites. Pathogen monitoring and vegetation response monitoring will continue until the site has been declared by ODA to be disease-free for two years. Since the discovery of this site, four aerial surveys were flown (2 fixed wing, 2 helicopter) over tanoak ecosystems that include lands managed by the Rogue River-Siskiyou NF. All dead tanoaks identified in those surveys were visited on the ground and examined for symptoms and signs of *Phytophthora ramorum*.

The Forest Service continues to closely cooperate with Oregon Department of Forestry, Oregon Department of Agriculture, and Oregon State University in surveys, monitoring, and eradication treatments for Sudden Oak Death in Curry County. While the pathogen has not been eradicated in SW Oregon tanoak forests, efforts have resulted in greatly reduced spread.

The Forest is currently working with fish and wildlife regulatory agencies to develop agreements and documentation necessary for rapid response to new Sudden Oak Death occurrences in threatened species habitat. Special projects in FY 07 included evaluating pathogen survival and vegetation response to eradication treatments five years post-treatment. Efforts to keep the public informed about Sudden Oak Death include participating with cooperators in public meetings in Brookings, stakeholder meetings in Salem, and the production of a “Stop the Spread” publication

(http://egov.oregon.gov/ODF/PRIVATE_FORESTS/docs/fh/UcanHelp060707.pdf) aimed at special forest products permittees and the general public.

² Glyphosate is an herbicide used by the Forest Service. There are currently 35 commercial formulations of glyphosate that are registered for forestry applications. Refer to: *Glyphosate – Human Health and Ecological Risk Assessment Final Report*, USDA Forest Service, March 1, 2003.

Figure 1-2. National Forest *Phytophthora ramorum* Treatment Site Near Loeb State Park



CONCLUSIONS AND NEEDS: Based on these findings, there is no immediate action needed for vegetation management effects on timber harvest treatments. It is recommended that further action be taken to develop monitoring practices that will verify if other resource activities (weed control, range, fuels, wildlife, etc.) are being planned and designed and if adequate monitoring of effectiveness is being conducted. Forest Plan modeled outputs are not consistent with the changes enacted by the Northwest Forest Plan; however, this was predicted and no immediate change is recommended.

The POC ROD plan amendment includes: a) Standards and Guidelines for General Direction applicable everywhere and Management Practices optional for projects, b) a Risk Key, and c) Identification of 7th field watersheds, which require implementation of Management Practices if the management activity introduces appreciable additional risk to the POC in that watershed.

Continue to monitor and aggressively treat *Phytophthora ramorum* if detected on National Forest System lands. Continue to plant/interplant with rust resistant five-needle pines to maintain these minor species on the landscape and provide species diversity for the Forest. Continue to improve integration between silvicultural and fuels treatments to reduce the fuels hazards where possible and to improve the resiliency to wildfire effects across the Forest.

MONITORING ITEM: ANADROMOUS AND RESIDENT FISH HABITAT

GOALS(S), MONITORING QUESTIONS(S): The Forest goal is to provide and maintain habitats with diversity and quality, capable of recovering populations of resident and anadromous salmonid fish species to their potential. Monitoring questions are:

- **Are the quantity and quality of rearing pools and coarse woody material being generated in the stream channel adequate for fish habitat to address objectives of potential?**
- **Are Forest Plan goals, objectives, and desired conditions for anadromous and resident salmonid fish being achieved? Are management activities consistent with ACS objectives?**
- **How effective are fish habitat improvement projects on stream channel configurations?**

Introduction

The FY 2007 report highlights the accomplishments in aquatic restoration for the top three priority watersheds on the Forest. The top three priority watersheds are the: South Fork Coquille (Powers Ranger District); Sucker Creek (Wild Rivers Ranger District); and Applegate River-McKee Bridge (Siskiyou Mountains Ranger District.). Ultimately, the long-term goal for restoration of the high priority watersheds includes forest and aquatic systems resilient to disease, insects, fire, and flood events. This report outlines the implementation of projects which set the aquatic and riparian systems in the top priority watersheds on a trajectory toward recovery.

Background

The Forest implemented an Integrated Work Plan (IWP) during FY 2005 which emphasized protecting, maintaining and restoring health to priority watersheds (5th field HUC). First, resource priorities for fire, insects and disease, terrestrial habitats, and aquatic and riparian habitats were determined by Forest and District personnel. Then, these results were combined, and a Forest-wide scoring convention was used to determine where common resource issues existed by watershed. This approach focuses time, funding, projects, and partnerships more efficiently and effectively.

A Forest team of fisheries biologists and hydrologists used input from Forest monitoring data and partners (the State, watershed councils, and conservation groups) to develop a watershed ranking system. The selection of priority aquatic/riparian watersheds was based on the relative importance of these watersheds for anadromous fish, water quality, the current health and resilience of these watersheds, and the predicted responsiveness of the watershed to restoration treatments.

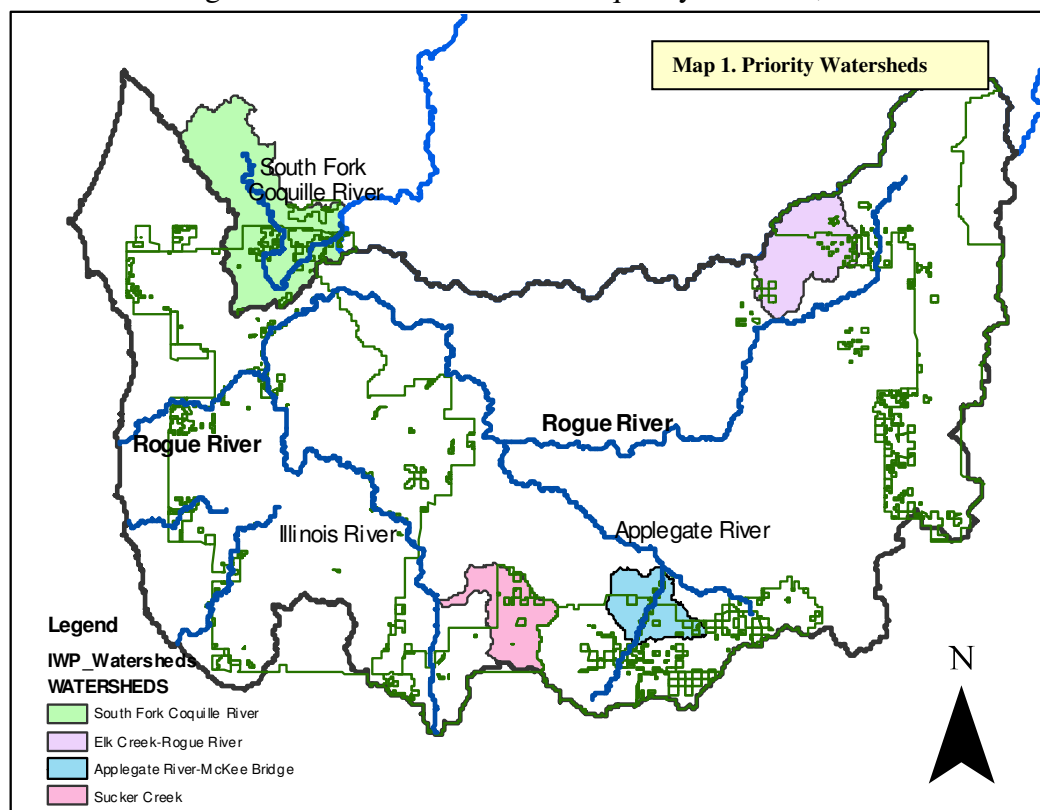
Restoration treatments needed to place the watershed on a recovery trajectory were determined and then prioritized. These high priority treatments include, but are not limited to, streambank and channel stabilization, surface-flow restoration, improvement or decommissioning of roads, removal of fish barriers, placement of instream large wood, thinning and planting in young-age riparian stands, removal of non-native plant species within riparian areas, underburning in outer riparian areas, and mining violation enforcement. These projects will be the focal point for aquatic restoration on the Forest over the next few years.

Funding for the Forest comes from the National Strategic Plan Goal/Objective (SBO) 1.5.1: Restore Watersheds & Aquatic Species Diversity (National Forest funding codes NFWF, NFWW, and NFRD) are used in combination with partner funding to implement restoration projects. Aquatic funding under the IWP is divided among the administrative units based on the ranking of the watersheds. The highest priority watersheds receive most of the appropriated funds and the emphasis for external funding (grants). The administrative units with lower priority watersheds are encouraged to use partnerships to continue restoration efforts. The Forest has partnerships with the Oregon Watershed Enhancement Board, Whole Watershed Joint Venture (consortium of partners), The Nature Conservancy, Oregon Department of Fish and Wildlife, Middle Rogue Steelheaders, and other aquatic advocacy groups which greatly enhance the Forest's ability to implement restoration goals and objectives.

Priority Watersheds for Aquatic Restoration

The purpose of the IWP and Regional direction was to focus efforts in two or three watersheds and complete meaningful restoration work in three to five years. Three watersheds were identified as a top priority for aquatic and riparian restoration on the Forest: the South Fork Coquille, Sucker Creek, and Applegate River – McKee Bridge (Map 1). The South Fork Coquille watershed was rated highest for fish values and water quality concerns, while the

Sucker Creek and Applegate River – McKee Bridge watersheds were also recognized as important for anadromous fish and water quality concerns. The Applegate River – McKee Bridge watershed received the highest scoring in the IWP planning



from an integrated resource approach (fuels, wildlife, fish, and water quality), compared with the other high priority watersheds. The most efficient and highest value restorative measures would be implemented first to place the watershed on a recovery path. Long-term watershed recovery would rely on tree growth and crown closure, natural stabilization of streambanks, recruitment of large wood to the stream channel from the riparian zone, and increased resilience to natural events.

Implementation of Project Proposals in the Aquatic Restoration Plans

The highest ranked projects to set the top three priority watersheds (Map 1) on a recovery trajectory are listed in the Aquatic Restoration Plans for each watershed. Accomplishments and objectives for the future years are included in these plans. The level of restoration work needed to bring these watersheds on a trajectory toward recovery varies by watershed. For example, the Applegate River – McKee Bridge watershed is expected to have priority work completed by 2010. However, the Sucker Creek and South Fork Coquille watersheds will require substantive restoration work past 2010. FY 2007 accomplishments and the associated funding for the priority watersheds are described in the following sections.

South Fork Coquille 5th Field Watershed (Map 2)

Johnson Creek Channel and Fish Habitat Restoration (Photos 1 and 2) and South Fork Coquille Riparian Treatment (NFWF-6 miles and NFWW-25 acres) were successfully completed in FY 07. Total funding for the project was \$159,000. Funding resources were: Oregon Watershed Enhancement Board (OWEB) \$40,000 (25%) and FS \$119,000, consisting of NFWF \$69,000 (43%) and NFWW \$50,000 (32%) (\$25K channel and \$25K riparian).



Figure 1-3. Johnson Creek Habitat Restoration



Photo 1. Pre-project



Photo 2. Post-project

Sucker Creek 5th Field Watershed (Map 3)

The Sucker/Grayback Fish Habitat, Stream Channel, Bank Stabilization (Photos 3 and 4), Passage, and Riparian Restoration, & Interpretive Signing Project was successfully completed during FY 07 (NFWF-4 miles and NFWW-25 acres). Photo 4 shows Photo 4 shows rootwad/log vane J-hook combo with constructed bankfull bench. The total project funding was \$157,360: OWEB grants \$53,360 (34%), KV \$50,000 (32%), and FS \$54,000 (34%), consisting of NFWF \$31,000 (20%) and NFWW \$23,000 (15%). Sunstar road decommissioning and rerouting (2 miles) (East Fork Illinois River priority watershed) utilized CMRD funds (\$20,000) and NFWW funds (\$10,000).

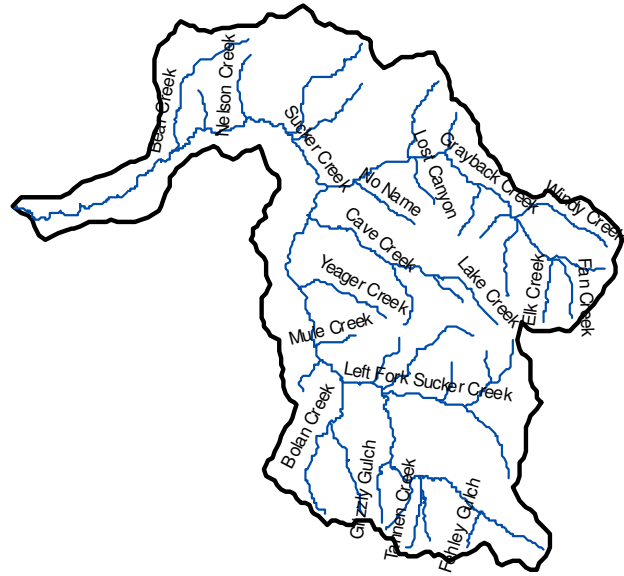


Figure 1-4. Sucker Creek Streambank Stabilization



Photo 3. Pre-Project



Photo 4. Post-Project

Applegate River - McKee Bridge 5th Field Watershed (Map 4)

Sub-watersheds within the Applegate-McKee Bridge watershed have different aquatic limitations. Channel surface flow is primarily a concern within Palmer Creek and Star Gulch (Project Priority 1) sub-watersheds, as dry stream channels present a direct barrier to migrating fish. The Palmer Creek Channel Surface Flow Project Phase I was successfully completed during 2007. Objectives were met by providing fish passage during out-migration. Additional work will be completed during 2009 (Phase II) to continue restoration upstream of the project area and continue surface flow.

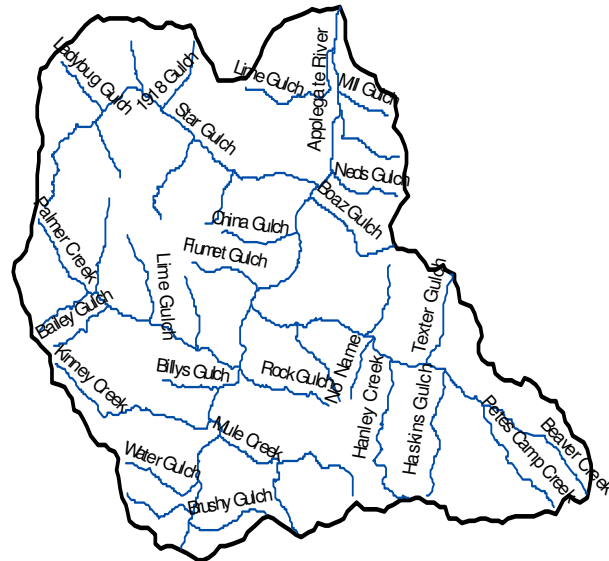


Figure 1-5. Riparian Thinning & Noxious Weed Removal Along the Applegate River



Figure 1-6. Riparian Thinning & Noxious weed Removal Adjacent to Palmer Creek.



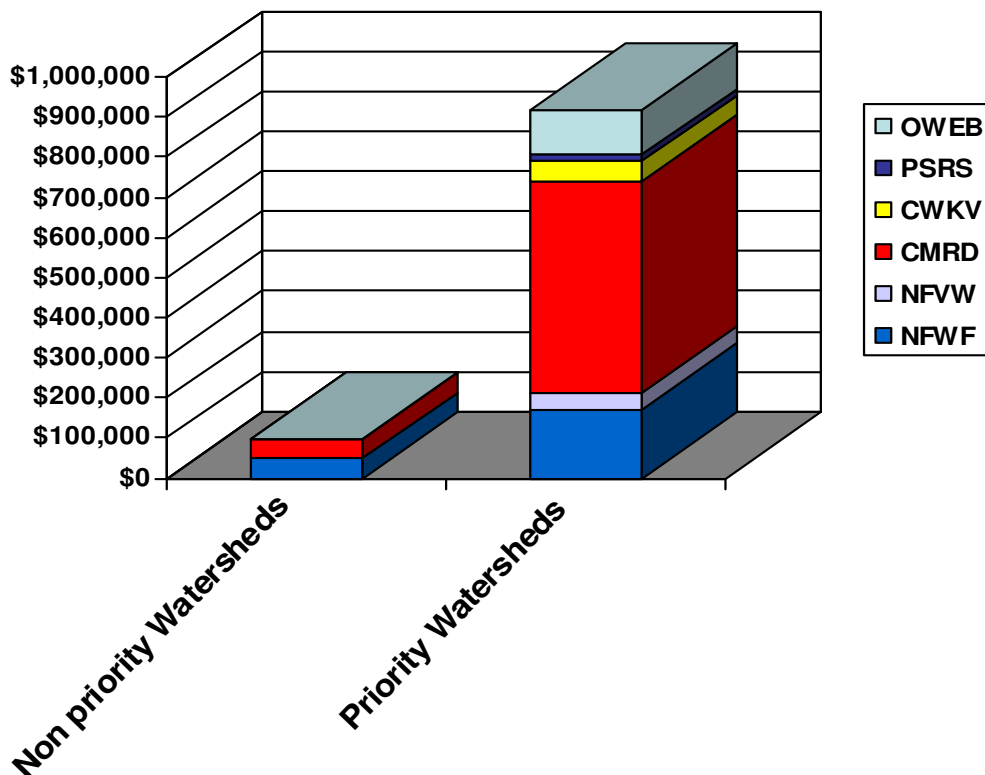
During fiscal year 2007, riparian thinning (2 miles) was completed within the Applegate-McKee Bridge watershed. Thinning riparian areas and blackberry removal will improve future large wood recruitment and shade by increasing native riparian species reestablishment. Total funding was \$48,500; Title II \$15,000 and FS NFWF \$23,500 and NFWW \$10,000. Partners for this restoration project were the Applegate Watershed Council, PayCo Title II, Oregon Department of Fish and Wildlife, and Medford District BLM.

Summary

During FY 2007, there were 50 acres (NFWW funds) and 12 stream miles (NFWF funds) of channel restoration, fish habitat, and riparian restoration completed. This restoration was accomplished through cooperative work and *supplemental external funding and partnerships* which has *doubled outputs and increased restoration success* in the priority watersheds.

Aquatic funding and efforts were concentrated to increase the effectiveness of appropriated and partner dollars for high priority restoration. About 88% of NFWF fisheries funding, NFWW hydrology, CMRD roads, grants, and other funding for restoration is currently directed towards these top three watersheds (Figure 1-6. This is the intent of the Forest's IWP effort, focus energy and funds to high priority areas and implement and monitor these efforts over time. Restoration planning by watershed under the IWP process allowed the Forest to make funding and resource decisions for restoration that focus efforts in two to three watersheds, rather than dividing funds and resources evenly among the five administrative units on the Forest.

Figure 1-6. Distribution of Aquatic Restoration Funding Across the Forest



MONITORING ITEM: *LAND SUITABILITY*

GOAL(S), MONITORING QUESTION(S): The goal is to manage for timber resources only on lands where technology exists to assure regeneration success within a specified time period. This Monitoring Item is required by 36 CFR 219.27(c)(1). The monitoring questions are:

- **Are timber management activities confined to suitable lands?**
- **Are unsuitable lands properly classified? Has a change in technology affected suitability classification?**

FINDINGS, EVALUATION & RECOMMENDATION(S):

Rogue River National Forest

All timber sale harvest areas are routinely assessed for suitability for regeneration harvest. These assessments usually encounter slightly more area of unsuitable lands than was recognized in the 1990 Forest Plan. Regeneration harvest is not prescribed on lands that have been verified as unsuitable. Some adjustments were made to the land base in the first few years of Forest Plan implementation.

There have not been any adjustments made to the land base in the last 5 years (2003-2007). Amount of such lands are felt to be insignificant at this time, but these changes are being tracked and will be incorporated into Forest Plan revision. There has been no change in technology that has or would affect land suitability classifications.

Siskiyou National Forest

The 1989 Forest Plan has a threshold of 10,000 acres change in suitability classification for the first 10 years. Monitoring shows there are no changes beyond the threshold. The Northwest Forest Plan substantially reduced the land base for programmed timber harvest. It also adjusted the level of timber harvest for the Siskiyou National Forest (24 MMBF/year).

RECOMMENDATIONS: The overall finding is that results are acceptable, management direction is being achieved and current practices need to continue. There is a recommendation to incorporate the summation of land suitability changes at the end of the ten-year planning period or during Forest Plan revision.

MONITORING ITEM: *TIMBER OFFERED FOR SALE*

GOAL(S), MONITORING QUESTION(S): The goal is to manage for timber resources and long term harvest levels, as directed by the Forest Plan. This Monitoring Item is required by 36 CFR 219.12(k)(1). The Monitoring Question is:

- **Is the Forest offering the volume of chargeable and non-chargeable timber, as assumed in the Allowable Sale Quantity (ASQ) and the Timber Sale Program Quantity (TSPQ)?**

FINDINGS, EVALUATION & RECOMMENDATION(S):

Rogue River National Forest

Under the 1990 Land and Resource Management Plan, the TSPQ was 123.0 million board feet (MMBF) or 22.81 million cubic feet (MMCF) per year. Various factors associated with old-growth and late-successional habitat, court injunctions, lawsuits and new land management decisions (i.e., the Northwest Forest Plan) have changed the amount of timber offered for sale. Under the Northwest Forest Plan, 26 MMBF has been determined to be the Probable Sale Quantity (PSQ) for the Rogue River portion of the Rogue River-Siskiyou National Forest.

The following table shows the timber offered for sale and harvested since 1990. The table includes both chargeable and non-chargeable volume. The current focus for the Forest is not on implementation of timber management projects. In addition to density management thinning to promote forest health, timber volume comes from stand treatments designed for fuels reduction, wildlife habitat improvement, riparian area improvement, danger tree removal and salvage of dead timber.

Table 1-1. Timber Volume Offered for Sale and Harvested: Rogue River portion of the Rogue River-Siskiyou National Forest

Fiscal Year	Volume Offered (MMBF)	Volume Harvested (MMBF)
1990	197.1	134.3
1991	52.4	95.4
1992	7.3	62.8
1993	10.5	61.2
1994	14.7	47.0
1995	26.3	28.8
1996	22.2	20.4
1997	25.1	30.5
1998	19.7	19.1
1999	2.6	11.1

Fiscal Year	Volume Offered (MMBF)	Volume Harvested (MMBF)
2000	0.6	10.6
2001	0.8	2.5
2002	6.4	14.0
2003	8.9	8.9
2004	0.3	8.0
2005	17.4	7.8
2006	19.1	4.0
2007	38.1	12.1
Total	469.5	578.5
Average	26.1	32.1

Siskiyou National Forest

Under the 1989 Land and Resource Management Plan, the TSPQ was 160 million board feet (MMBF) or 28.4 million cubic feet (MMCF) per year. Various factors associated with old-growth and late-successional habitat, court injunctions, lawsuits and new land management decisions (i.e., the Northwest Forest Plan) have changed the amount of timber offered for sale. Under the Northwest Forest Plan, 24 MMBF has been determined to be the Probable Sale Quantity (PSQ) for the Siskiyou National Forest.

The following table shows the timber offered for sale and harvested since 1990. The table includes both chargeable and non-chargeable volume. The current focus for the Forest is not on implementation of timber management projects. In addition to density management thinning to promote forest health, timber volume comes from stand treatments designed for fuels reduction, wildlife habitat improvement, riparian area improvement, danger tree removal and salvage of dead timber.

Table 1-2. Timber Volume Offered for Sale and Harvested: Siskiyou portion of the Rogue River-Siskiyou National Forest

Fiscal Year	Volume Offered (MMBF)	Volume Harvested (MMBF)
1990	137	120.0
1991	58	63.0
1992	2	50.0
1993	3	11.0
1994	8	12.0
1995	16	17.0
1996	28	56.0
1997	28	37.0
1998	24	20.0
1999	18	26.0

Fiscal Year	Volume Offered (MMBF)	Volume Harvested (MMBF)
2000	1	13.0
2001	1.5	3.1
2002	14.3	1.3
2003	9.7	6.9
2004	72.2	18.9
2005	28.3	48.9
2006	27.8	23.3
2007	31.0	20.6
Total	507.8	548.0
Average	28.0	30.4

Part Two: Status of Implementation Activities associated with the Biscuit Fire Recovery Project

The Biscuit Fire, located in southern Oregon and northern California, began on July 13, 2002, burned for 120 days, and reached 499,965 acres. Estimated to be one of Oregon's largest in recorded history, the Biscuit Fire encompassed most of the Kalmiopsis Wilderness. The boundary of the Biscuit Fire stretches from 10 miles east of the coastal community of Brookings, Oregon; south into northern California; east to the Illinois Valley; and north to within a few miles of the Rogue River.

The fire burned in a mosaic pattern; approximately 20% of the area burned lightly, with less than 25% of the vegetation killed. Another 50% of the area burned very hot, with more than 75% of the vegetation killed. The Rogue River-Siskiyou National Forest has been making progress re-building trails and recreation sites, restoring safe roads through the falling of dead (danger) trees along the transportation system, and reforesting burned lands. Sale of salvageable timber within the area burned by the Biscuit Fire was designed to support the economy and provide jobs for the surrounding communities, as well as potential funding to invest in restoration projects.

The Rogue River-Siskiyou Forest Supervisor signed three Records of Decision (RODs) in July 2004 for the Biscuit Fire Recovery Project, authorizing salvage sales, planting, creation of Fuel Management Zones (FMZs), meadow and savannah restoration, road closure, road stabilization, road maintenance, monitoring, and a landscape scale learning study. The RODs followed a draft and final Environmental Impact Statement (Biscuit EIS). The RODs were distinguished by the land management allocations within which these actions were authorized. One was for actions in Matrix lands, one for actions in Late-Successional Reserves (LSRs), and one for Inventoried Roadless Areas (IRAs).

This annual monitoring report includes the status of implementation activities associated with the Biscuit Fire Recovery Project. Presented below are the accomplishments to date, and planned implementation of projects and actions. Data for both accomplishments and planned activities and the scheduled timing of the completion was taken from the FACTS database (Forest Service Activities Tracking System) for the Forest.

1. Salvage Harvest

Approximately 93,742 thousand board feet (MBF) of salvage volume was removed from the Biscuit Fire area. Harvest was completed in fall of 2007. Stumpage receipts totaled \$11,019,393. Receipts went toward timber sale receipts (Knutson-Vandenberg trust fund collections), the Salvage Sale Fund, and to the US treasury.

2. Vegetation and Habitat Restoration

2a. Conifer Planting

Reforestation efforts continue, though reduced from the planned planting reported to the House and Senate Committees on Appropriations in 2006 (Statement 4 in the report).

Planting Year	Reasonable Estimate of Reforestation Schedule Updated Spring 2007	Acres Actually Planted
2003	200	691
2004	4,800	4,658
2005	5,000	4,112
2006	10,000	1,282
2007	2,034	965
2008	584	
2009	0	

The following shows types of reforestation actions (actual and planned) by fiscal year:

- 2003 – Planting of burned plantations; seedlings from neighboring landowners.
- 2004 – Planting burned plantations that did not need site preparation.
- 2005 – Planting burned plantations that needed site preparation, salvage sale areas, and some of the “other” planting areas (landscape planting and planting in landscape burn areas).
- 2006 – Planting salvage sale areas.
- 2007 – Planting salvage sale areas.
- 2008 – Plant/replant salvage sale areas.
- 2009 – None: original plan for any replanting of poorly stocked salvage sale areas has been evaluated as unnecessary due to high rate of first time success of planting.

Estimate of planned planting of burned plantations has been dramatically reduced due to the natural regeneration seen within the units. Surveys to formally account for this natural regeneration of the Biscuit Fire area have only been partially accomplished to date, but are planned for FY 2008 through FY 2010. Planting costs generally are estimated at an average \$550/acre (walk-in units with no road access are higher).

2b. Site Preparation

Site preparation accomplished 2004 through 2006 was 214 acres. Site preparation in FY 2007 was associated with felling dense areas of dead small trees to allow for planting.

Site Preparation	FY 2007	86 acres
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Site preparation for out-year planting remains only for a few of the salvage sales that closed late in FY 2007.

Planned site preparation acres:

FY 2008	FY 2009	FY 2010
154 acres	---	57 acres

2c. Natural Regeneration

Natural regeneration has been successful in bringing back a vegetative cover for the forest. Formal surveys are still planned for the future to assess the actual stocking numbers per acre, distribution, and species. Even with natural regeneration, artificial reforestation may be required in selected areas to ensure restoration of minor species such as sugar pine, ponderosa pine, and Port-Orford cedar on the landscape.

To date, 683 acres of the Biscuit Fire area has been surveyed and certified fully stocked with natural regeneration. Additional natural regeneration acres planned:

FY 2008	FY 2009	FY 2010
10,071 acres planned as needed work; \$503,550 needed to accomplish	1,500 acres planned as needed work; \$75,000 needed to accomplish	440 acres planned as needed work; \$22,000 needed to accomplish

2d. Release

Release and weeding activities enhance the growing conditions for natural and planted trees, reduce vegetative competition, and assist with stand development.

Release	FY 2007	0 acres
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FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
151 acres	670 acres	611 acres	40 acres	16 acres

2e. Wildlife Habitat Restoration

Seeding & Planting for Wildlife Habitat Enhancement	FY 2007	30 acres
Rehab opening with Wildlife Habitat	FY 2007	0 acres
Wildlife Nest Structure Development	FY 2007	0 acres
Monitor Wildlife Habitat	FY 2007	0 acres

Planned Wildlife Habitat activities:

Seeding and planting for wildlife habitat development or enhancement:

FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
537 acres	52 acres	10 acres	---	---

Maintenance of wildlife habitat:

FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
492 acres	1,541 acres	199 acres	---	---

Wildlife nest structure development:

FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
680 structures	----	----	---	---

Rehabilitate openings for wildlife habitat:

FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
342 acres	297 acres	359 acres	---	---

3. Roads and Water Quality Restoration

3a. Roads Decommissioned/obliterated

Road Closure	FY 2007	11 miles
Road Obliteration	FY 2007	3.9 miles

Planned activities to manage the transportation system are:

Road closure:

FY 2008	FY 2009
3.2 miles and 1 acre	1.6 miles

Road obliteration:

FY 2008
1.1 miles and 10 acres

3b. Hydrology and Soils Restoration

Activities to minimize erosion and sediment transport as well as maintain or restore soil productivity have been accomplished in prior years or have been considered unnecessary for recovery of the burned area.

Erosion control	FY 2007	7 acres
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Planned activities to minimize erosion and sediment transport:

FY 2008	FY 2009
5.5 acres	1 acre

3c. Invasive Plant Management

The treatment of invasive plants and the monitoring of their presence is of high concern within the Biscuit Fire area.

Noxious Weed Treatment & Monitoring	FY 2007	152.9 acres treated and 3,267.2 acres monitored
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Planned noxious weed treatments:

FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
650 acres	650 acres	648 acres	646 acres	74 acres	---

Planned noxious weed monitoring:

FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
6,609.7 acres	6,468.7 acres	14,093.7 acres	280.8 acres	5 acres

4. Fuels Treatments and Habitat Restoration

4a. Creation of Fuel Management Zones

Fuels management activities include development of Fuel Management Zones or fuel breaks and prescribed burning for site preparation. The acres of prescribed burning for site prep are included in the site preparation acres above.

Fuels Management	FY 2007	385 acres of piling and burning of piles; 261 acres of lop & scatter of fuels; and 996 acres of broadcast burning
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Planned fuels management are 5,754 acres of piling and burning of piles; 2,370 acres of lop & scatter of fuels; and 5,590 acres of broadcast burning.

Planned development of a Fuels Management Zone (FMZ): 17.9 acres of FMZs are planned for construction in 2008. Some of the originally planned FMZ work has been deferred due to lack of funding.

4b. Pre-commercial Thinning for Hazard Reduction

Pre-commercial Thinning	FY 2007	0 acres
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The planned pre-commercial thinning and pruning scheduled is in association with the Bald Bear Hazard area. About 2,285 acres are planned for thinning and pruning for fuels hazard reduction.

Part Three: Special Inventory and Monitoring Projects for FY 2007

The following includes a report of observations and findings from special inventory and monitoring efforts on the Rogue River-Siskiyou National Forest. These reports cover a period from mid-summer 2006, through mid summer of 2007.

Salmonid and Lamprey Spawning Survey Powers Ranger District

The objective of this monitoring was to determine population and trend data for anadromous salmonids on the Powers Ranger District. Data gathered included number of individuals, number of redds, timing of runs and hatchery to wild ratios. Species targeted included but was not limited to Pacific lamprey, fall Chinook, Coho and winter steelhead.

Methodology included weekly spawning surveys completed along designated stream reaches. Surveys continued throughout the spawning season. Redds were marked to avoid recounting. Data was shared with the Oregon Department of Fish and Wildlife.



Figure 3-1. South Fork Coquille, Spawning Steelhead



Figure 3-2. South Fork Coquille



Figure 3-3. South Fork Coquille, Spawning Lamprey

The benefit of the results of this monitoring is to gain a better understanding of the life history of the Pacific and Western brook lamprey within in the South Fork of the Coquille River. Another benefit is to incorporate this new information into management practices that may assist in identifying things like passage, spawning habitat, and rearing habitat. This salmonid data is used to determine hatchery to wild ratios, baseline data and trend information for important commercial and recreational species. For more information, contact Steve Namitz 541-439-6250.

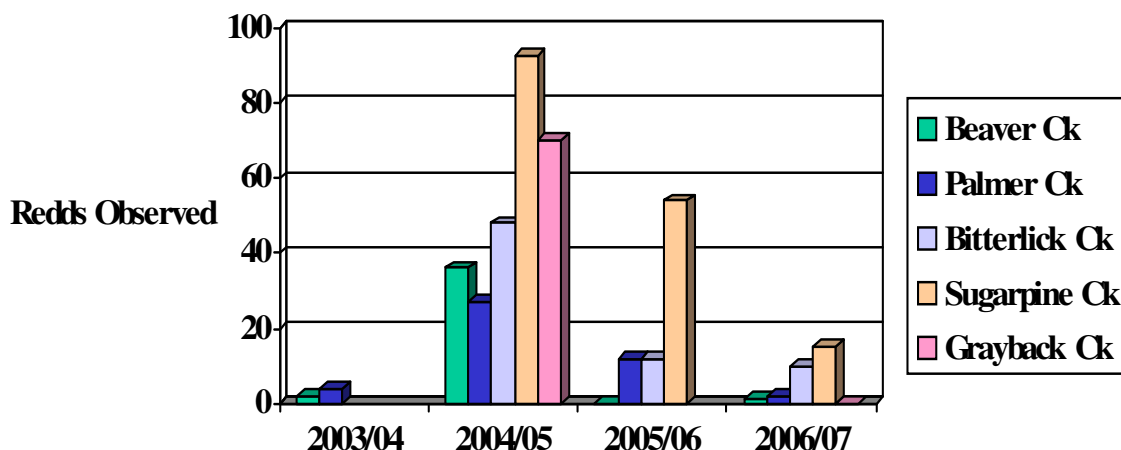
Spawning Surveys and Juvenile Census Siskiyou Mountains Ranger District

Spawning surveys are done for coho salmon and winter and summer steelhead to supplement and complement other surveys done by the State and Watershed Councils. Data is used to compare adult salmon escapement between years and against surveys for juvenile fish during the summer.

Coho and steelhead spawning surveys were conducted on Little Applegate River, Beaver Creek, and Palmer Creek and fish presence/absence surveys (Little Applegate River) using Oregon Department of Fish and Wildlife (ODFW) protocol.

Summaries of the data were completed during the fall of 2007. Data has been compiled in a database and shared with watershed councils, BLM, and ODFW. A compilation of all past coho spawning surveys by these agencies was undertaken for information sharing and watershed restoration planning.

Figure 3-4. Redds Observed - Coho and Steelhead Spawning Surveys



National Forest System Lands in the Rogue River and South Coast sub-basins play a crucial pathway in sustaining and recovering anadromous fish populations that have been depressed by environmental and anthropogenic influences. A common scenario in southwest Oregon watersheds is that habitat conditions deteriorate rapidly once streams flow off public lands. Water uses and land uses are often dedicated to maximizing production of agricultural goods on floodplains at the expense of the riparian forest and stream system. Water removal for irrigation use notably reduces available aquatic habitats. Water withdrawals also exacerbate elevated water temperatures during the summer months by increasing the effects of solar radiation on surface waters.

The Forest will continue conducting coho spawning surveys to track numbers of salmon using Forest streams to reproduce, as well as, provide the proportion of use compared with the total salmon run in the main stem Rogue River. These areas provide some of the best quality habitat for spawning and rearing on National Forest for coho salmon within the Rogue River Basin and are important focal areas for recovery of this population.

Observations by fish biologists and stream survey data indicate that suitable habitat exists within reaches on public lands to accommodate increased numbers of juvenile coho for their freshwater life history. Spawning surveys are used to observe where adults prefer to spawn within the streambed and stream reach and adaptive management can be employed to design instream habitat projects to best suit this fish species.

Continuing these spawning surveys for a decade or more should provide useful data through the three to four year cycles that coho salmon escapement appear to follow in southwest Oregon. Biologists will be able to calculate the proportion of salmon populations that use National Forest stream reaches for spawning and rearing and better assess the importance of these stream reaches and watersheds in sustaining and recovering salmon populations. For more information, contact Susan Maiyo (541) 858-2270.

Effects of Conifer and Shrub Encroachment on Darlingtonia Fen Wild Rivers Ranger District

The objective of this project and subsequent monitoring was to thin encroaching shrubs and conifers from a Darlingtonia fen at Star Flat, Wild Rivers Ranger District. Some Darlingtonia fens have been identified as susceptible to invasion by competing vegetation; this encroachment may eventually shade out and negatively alter habitat for *Darlingtonia californica* and other rare plants. The fen at Star Flat did not burn in the 2002 Biscuit Fire. Additionally, heavy use and early settlement of the flat has likely altered the hydrology of the fen, increasing susceptibility to encroachment. For all these reasons, Star Flat was selected as an ideal experimental fen to assess the effects of conifer and shrub reduction.

In 2006, azalea (a stump sprouter) was cut back (to mimic broadcast fire) and a select few conifers (all less than 6" DBH) were removed from the fen. In 2007, over 100 small (<6" DBH) conifers were cut and removed from the fen. To assess vegetational response, eight permanent photo points were installed and 4 photos (one in each cardinal direction) were taken from each site pre-thinning and post-thinning.

Thinning in stages resulted in a gradual increase of light reaching *Darlingtonia californica* and other rare plants. Monitoring information from the fixed photo points is too coarse to assess actual response of individual rare plants. Nonetheless the rare species of the fen will likely benefit from the treatment, especially in areas where competing vegetation had created a high degree of canopy cover. The photo points can be used to assess how long it takes encroaching vegetation to return, given the absence of fire. Additionally, the thinning effectively prepared the site for a prescribed or natural fire, the effects of which could also be monitored using the photo points. For more information, contact Maureen Jules (541) 592-4052.



Figure 3-5. Daringtonia Shaded by Encroaching Conifers



Figure 3-6. Vegetation Encroaching into Fen Habitat



Figure 3-7. Same site post-thinning

Rare Plant Response to Fire; Third Year Wild Rivers Ranger District

The ongoing objective of this monitoring was to collect the 3rd successive year of data in order to assess the effects of a prescribed spring fire upon a large rare plant population.

Fifteen 1m² permanent plots were systematically placed throughout a 5 acre managed stand where *Erythronium howellii* (Howell's fawn lily) was present. For a control, fifteen 1m² permanent plots were set up on adjacent habitat just outside of the managed stand. In each plot, all non-reproductive and reproductive individuals were tallied prior to a spring underburn and for 3 successive springs following the fire. Additionally, % cover, coarse woody debris, bare ground, herb, grass, shrub and overstory canopy cover were recorded.

Year two following the fire, there were fewer reproductive individuals in burned vs. control plots, and a greater number of 1 leaf non-reproductive individuals in burned vs. control plots. By year three, there was a greater number of reproductive individuals in burned vs. control plots and no difference in the number of 1 leaf non-reproductive individuals between burned vs. control plots. This information provides a sound case study for the species and will add useful information if a Conservation Assessment is prepared for this species. For more information, contact Maureen Jules (541) 592-4052.



Figure 3-8. College Student Helps Collect Monitoring Data

Horse Creek Meadow Restoration/Prescribed Burn Wild Rivers Ranger District

The objective of this project was to restore open meadow grassland and reduce brush encroachment and increase forage for deer and elk. A complimentary objective was to restore native grasses by reintroduction fire back into the ecosystem.

This project has been an on-going restoration project. In 2005, volunteers from Wild Turkey Federation and Oregon Hunters Association were used to help clear brush out of one section in meadow. In 2006, the piles they created were burned. The 2007 project was to complete the broadcast burn of the main open meadow area and monitor the results.

As seen in the photos, hand lighting with drip torches was accomplished on 35 acres of grass/brush. Preparation of area included cutting grass and brush along edges of burn. The meadow was burned in late October 2006. Methodology involved two lighting crews comprised of 2 people blackening out along a road and 3 people using a zig-zag pattern across the open meadow. Another crew of 4-6 was used as the holding crew to suppress any spot fires.

The project expected to burn 80-90% of the area. Actual accomplishments included burning of 100% of target area with consumption of brush around 75% and grasses around 100%. There was one small 1/4 acre slop over. The ignition was completed within a 2 hour window. For more information, contact David Austin, Supervisory Wildlife Biologist 541-592-4000.



Figure 3-9. Igniting Main Meadow Area



Figure 3-10. Main Portion of West Part After Burn

Kanaka Meadow Native Plant Restoration Siskiyou Mountains Ranger District

Over twenty years ago when the Applegate Dam was constructed, a mitigation project for deer habitat occurred at Kanaka Meadow which included disking the meadow and planting non-native species. Since that time other non-native species such as medusahead and yellow starthistle have moved into the meadow and buckbrush (a prime deer winter browse) has grown too tall for deer to reach. The yellow starthistle was pulled for several years but other non-native species remain. This project included burning the meadow and burning back some of the buckbrush while maintaining white oak trees. It also included spreading native grass seed to germinate during the fall and winter rains.

The meadow was broadcast burned by Forest Service fire crews in late September and a hose line was placed around the perimeter to make sure the fire stayed within the area to be burned and not go into adjacent forest and hardwood areas. The prescribed burn went as planned. The upper part of the meadow was lit and the fire burned downhill through dry grass and forb material consuming some buckbrush shrubs while maintaining the white oaks.

Within a week of the burn, native grass seed that had either been collected locally or grown from locally collected seed was spread by hand. Seed of native grass species that were sown included: *Bromus vulgaris*, *Deschampsia elongata*, *Elymus glaucus*, *Festuca californica*, *Festuca roemerii*, *Koeleria macrantha*, and *Poa secunda*. For more information, contact Barbara Mumblo 541-899-3855.



Figure 3-11. Kanaka Meadow Preburn



Figure 3-12. Kanaka Meadow Start of Burn



Figure 3-13. Kanaka Meadow Burn



Figure 3-14. Kanaka Meadow Post Burn

Bat Species Distribution and Census; Oregon Bat Grid High Cascades Ranger District

The objective of this monitoring is to participate in the interagency Oregon Bat Grid census effort to determine species distribution and habitat use by the various Oregon bat species.

The Pacific Northwest was divided into a grid and randomly selected cells were chosen for sampling. One cell falls on the southern end of the High Cascades RD. Inside this cell, 4 sites are mist netted every year and 4 additional sites are acoustically sampled. Mist netting consists of spreading mist nets above small water drinking areas and collecting all bats netted within a 4 hour period. Captured bats are identified to species (where possible), sex and age. Various measurements are taken and a sample of the call is recorded. For some hard to distinguish species, DNA samples are collected from a wing for subsequent positive identification. The local work is being carried out by the Medford BLM with assistance from Forest Service personnel.

2007 is the second year of repeat sampling at the selected sites. Over 125 bats were captured in 4 nights of effort. This included individuals of 8 species. One site resulted in 98 bats captured, up from 48 the previous year. Another site, sampled the following night dropped to 12 bats captured from 50 the previous year. This demonstrates that local bat populations fluctuate substantially from year to year and within a single season. For more information, contact Norman Barrett (541) 560-3479.



Figure 3-15. *Myotis evotis* Captured During Mist Netting

Port-Orford-cedar Roadside Sanitation Effectiveness Monitoring Wild Rivers Ranger District

Port-Orford-cedar (POC) is an ecologically and economically important tree species. Port-Orford-cedar is affected by an exotic root pathogen, *Phytophthora lateralis* (PL). The pathogen causes POC root disease and is nearly always fatal to the tree it infects. Jules et al. (2002) showed that the incidence of new Port-Orford-cedar (POC) infection was positively associated with 3 factors:

Distance to the nearest POC

In infested streams, the mean distance from a road crossing a stream to the nearest POC was 10.5 meters. In uninfested streams, the mean distance from a road crossing a stream to the nearest uninfested POC was 117.7 meters.

Host abundance

In infested streams, the mean number of trees in proximity to the road crossing was 18.5 POC. In uninfested streams, the mean number of trees in proximity to the road crossing was 6.3 POC.

Catchment area

Catchment area is most directly an indicator of streamflow in the creek. Crossings with high catchment area were more likely to have flowing water during summer months while low catchment areas were seasonal. Mean catchment area, for infested streams, was 3,924.5 square kilometers compared to 1,759.3 square kilometers for uninfested streams.

Removal of POC from along roadsides (roadside sanitation) addresses these factors.

Technology Transfer activities would include updates to the POC Technology Team on regeneration rates associated with current vegetation types occurring within the roadside area of previously sanitized road systems. There are four years of fixed plot data to be combined with a potential fifth year of monitoring data that would be used to extrapolate the rates of regeneration to be used in strategic planning of sanitation treatments.

Port-Orford-cedar removal in the buffer area would include all POC from seedling stage to 16" DBH. Sanitization includes 25 feet on the cut bank (upslope side of the road prism) and 50 feet on the fill slope (down slope side of the road prism). Post treatment Monitoring would include established roadside plots from the pre-treatment surveys. Monitoring plots would be located every tenth of a mile and be a 1/100th of an acre and include photo points before treatment and after treatment.

FY 2007 Summary of NF Inventory and Monitoring (NFIM) Efforts

National Forest Inventory and Monitoring (NFIM) appropriated funding is used to conduct a number of monitoring projects. A summary of these efforts for terrestrial wildlife species is as follow:

Forest-wide breeding bird monitoring

Two long-term mist net sites were sampling up to 12 times per season, Horse Creek and Skeeter Swamp. A new site was also established in FY 2007 by the Klamath Bird Observatory (KBO) in the Ashland Watershed. KBO also continued to conduct extensive transect and point count surveys for breeding birds in the Ashland Watershed.

Spotted owl monitoring

Oregon State University and the Forest continue to conduct extensive spotted owl demographic surveys in the Ashland Watershed as well as conducting telemetry on eleven spotted owl pairs in association with the Ashland Forest Resiliency project.

Forest-wide eagle and peregrine monitoring

All known sites for peregrine falcons and eagles across the Forest were monitored for breeding success. Six eagle sites on the Forest were monitored for breeding and occupancy. Eight peregrine sites were monitored for breeding and occupancy and breeding in FY 2007.

Mardon skipper surveys

Surveys were conducted on both the High Cascades and the Gold Beach Ranger Districts for Mardon skipper, a rare butterfly. Known sites on High Cascades RD were monitoring for breeding and populations. A new site was located on the Gold Beach district in the Hunter Creek area.

Bat surveys

Forest biologists, in association with local BLM biologists, conducted mist net surveys on approximately 15 sites in the Rogue Basin in FY 2007

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Effects of Conifer and Shrub Encroachment on Darlingtonia Fen- Wild Rivers RD	Maureen Jules
Rare Plant Response to Fire; Third Year - Wild Rivers RD	Maureen Jules
Horse Creek Meadow Restoration/Prescribed Burn - Wild Rivers RD	Dave Austin
Kanaka Meadow Native Plant Restoration - Siskiyou Mountains RD	Barbara Mumblo
Bat Species Distribution and Census; Oregon Bat Grid - High Cascades RD	Norm Barrett
Port-Orford-cedar Roadside Sanitation Effectiveness Monitoring - Wild Rivers RD	Frank Betlejewski
FY 2007 Summary of NF Inventory and Monitoring (NFIM) Efforts	Dave Clayton
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